

ABSTRACT

A method of hydrogen sintering a substrate including a semiconductor device formed thereon comprises the steps of exciting a processing gas comprising a noble gas and a hydrogen gas to form a plasma comprising hydrogen radicals and hydrogen ions, and exposing the substrate to the plasma. A preferred method comprises forming a gate insulation film on a substrate, forming a polysilicon electrode on the gate insulation film, and exposing the polysilicon electrode to an atmosphere comprising hydrogen radicals and hydrogen ions.